PORTFOLIO

Industrial Design

by Luca Matturro

Selected works
c. 2022-2024

LUCA MATTURRO

Industrial Designer

Contacts

@ luca.matturro@gmail.com

in linkedin.com/in/luca-matturro

Bē behance.net/lucamatturro_design

Monza, Lombardia, IT

(+39) 327 747 4698

Languages

Italian / English

Software

- Rhino ●●●●●
- Keyshot ●●●●○
- Adobe Photoshop ●●●○○
- Adobe Illustrator ●●●○○
- Adobe InDesign ●●●●○
- 3D Studio Max ●●○○○
- OnShape / SolidWorks ●●●○○
- MS Powerpoint ●●●●●

Work Experience

2024 — INDUSTRIAL DESIGNER — 3 Monts - Milan

Design Odyssey Studio

Design Odyssey Studio is a studio from Milan specializing in Sports Equipment Design and Transportation Design.
I've collaborated with them as a Freelancer, aiding in the design of electric motorbikes for chinese brands.

2024 — SPECIAL PROJECTS TUTOR — 1 Month - Milan

IED Milan

IED Milan collaborated with Packaging Premiere to organize a workshop with students with the aim to design a set of trophies for their event. I've had the pleasure to act as a technical special projects tutor to aid the students in the design of their proposals.

2022 — INDUSTRIAL DESIGNER — 9 Months - Monza

Prologo

Prologo is an international high end brand of cycling products.
I had the opportunity to design and develop saddles, grips, tapes and gloves used by some of the best athletes in the world and by thousands of amateurs.

2022 — TRANSPORTATION DESIGNER — 3 Months - China, Remote

PIX Moving

Pix Moving is an Automotive Startup from China.
This experience lead to the design of the "Huniqa" concept car during DeAuto Hackaton wich won first place award. The car was designed in VR using tools like Gravity Sketch.

2019 — GRAPHIC DESIGNER — 12 Months - Monza

RiLevant

Rilevant is a Digital Innovation firm.
I've worked on photorealistic 3D renders of products, designed Brand Identities of various companies and managed social media pages creating and posting regular content and interacting with followers.

Education

2024 — MU1 - INDUSTRIAL DESIGN ENGINEERING AND INNOVATION

Poli.Design by Politecnico di Milano

Specializing master in Industrial Design Engineering and Innovation at POLI.design, founded by Politecnico di Milano.

Includes:
- AD AQUAM Workshop for Rubinetterie Treemme
- Community Manager for POLI.Design DOT Platform

2022 — BACHELOR'S DEGREE - INDUSTRIAL DESIGN

IED Milan

Bachelor's degree in Industrial Design at IED Milan.

Includes:
- User Experience Workshop with Gigliana Orlandi
- Design Language Course with Fabio Verdelli Design Studio
- Bennet Shopper Challenge Workshop
- IED Buddy program for Exchange Students

Prizes

- Ad Aquam - 1° Place
- Targa Rodolgo Bonetto - 3° Place
- DeAuto Hackaton - 1° Place
- Bennet Shopper Challenge - 1° Place

About Me

I am a highly motivated, creative, and innovative Product and Industrial Designer. Graduated at the top of the class in his bachelor's in Industrial Design and currently embarking in a specializing master in Industrial Design Engineering.
My approach is user-centered and detail-oriented. I have had the privilege of winning several competitions, demonstrating my skills in various design disciplines. I am highly passionate in multiple fields, spanning from Consumer Electronics to Sports Equipment, from Furniture Design to Transportation Design.

MY PROJECTS

IEDex

2022

pg. 4

Nembo

2023

pg. 12

Hibird

2024

pg. 18

Freshzone

2024

pg. 25

HOW CAN PEOPLE REDISCOVER THEIR SURROUNDINGS?

Design an E-Bike service that guides the user and allows for both urban and rural exploration

IEDex

2022
Bachelor's Thesis Project

Duration: 5 Months
Role: Research, Developement, CAD, Rendering

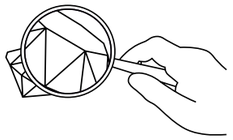
Partners

FERRINO IED

Winner of Targa Rodolfo Bonetto

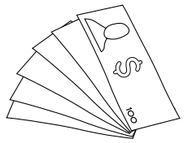
RESEARCH

Pain Points + Challenges

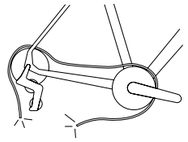


Users wish to **rediscover their surroundings** in search for hidden gems

Users **need guidance** but also wish for an **organic experience**



Bike touring has a **huge initial investment** for users wishing to start



Occasional bike users **struggle a lot with chain management**

Some users wish to **explore beyond the city**, the vehicle should be versatile

Carrying a **heavy backpack for long bike rides** is unsustainable and dangerous

Matrix

Opportunity

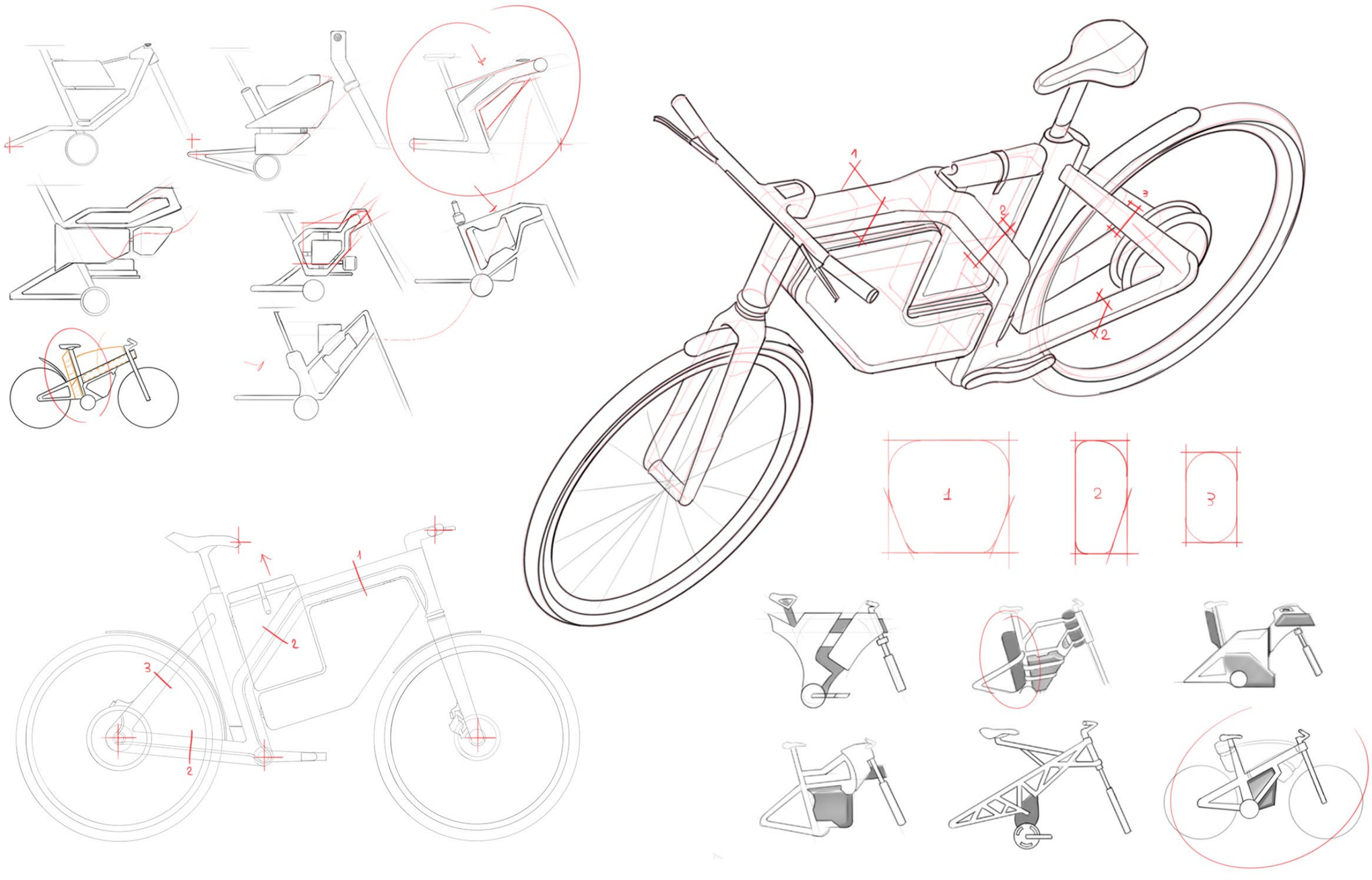
In today's urbanized world, people yearn to explore cityscapes and rural landscapes, yet face barriers due to **limited accessible and affordable options** like bikepacking or backpacking. To address this, we propose an innovative solution: an **e-bikepacking leasing service**. This empowers users to explore their surroundings with **guidance and affordability**, eliminating the need for a substantial initial investment.

Innovation of Use

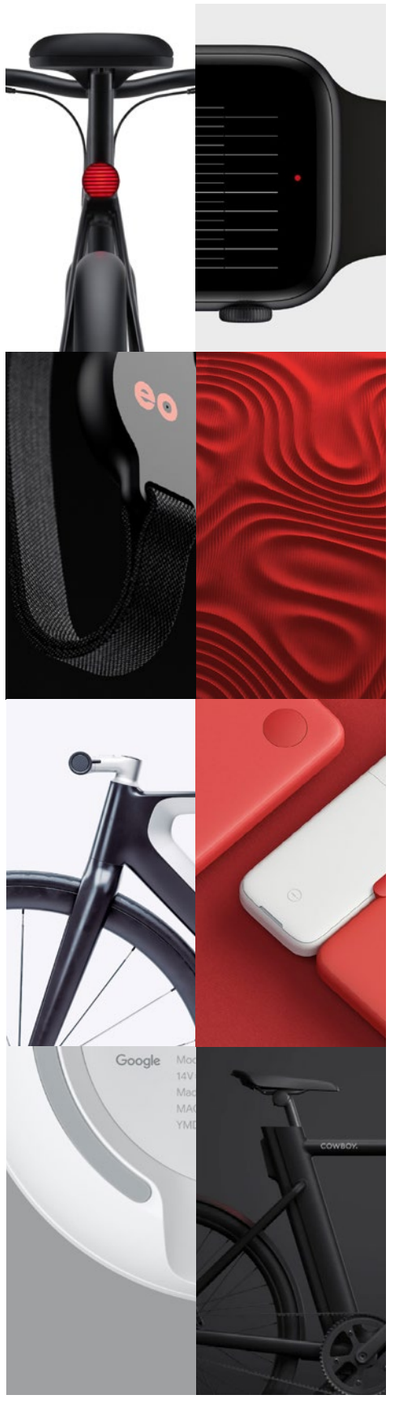
Innovation of use means thinking beyond aesthetics and focusing on **improving how products are used**. It involves understanding user needs, making products more intuitive and user-friendly, adapting them to different situations, collaborating across disciplines, prioritizing sustainability, and sometimes **challenging norms** to create fresh solutions.

IDEATION

Sketching



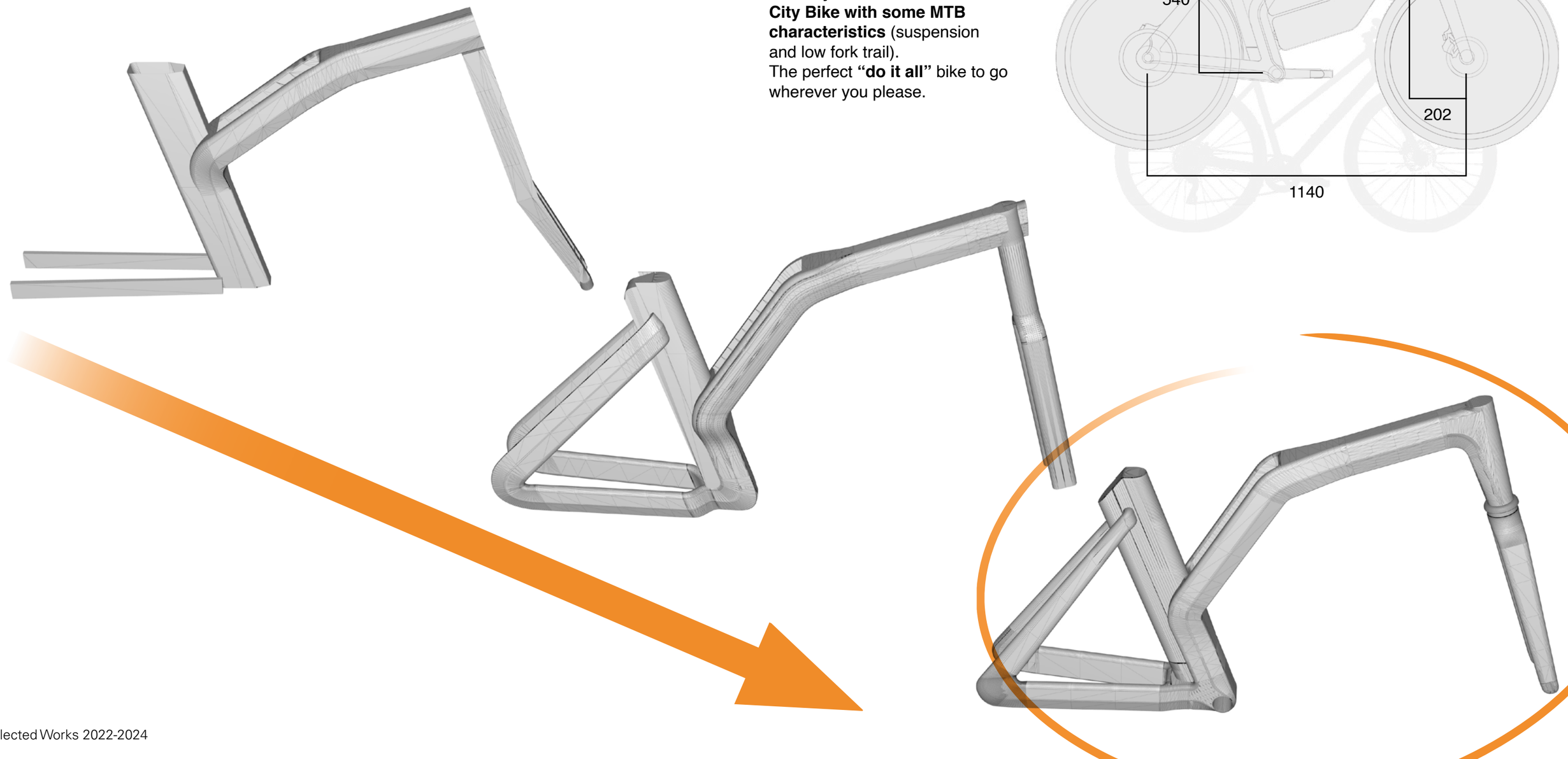
Inspiration



DEVELOPEMENT

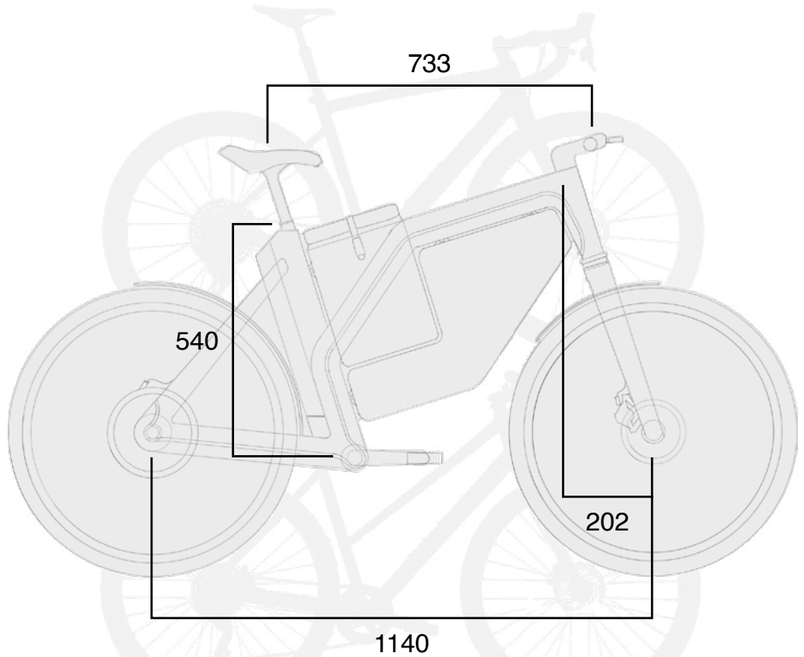
CAD Developement

The CAD model has been developed through many iterations. First we made **many rough drawings** to understand proportions, geometry and general shape.
We landed on a profile we were happy with and went on to decide the **shape of sections and how they are joined together**. Finally we put it all together and created a detailed CAD model for CNC and rendering.



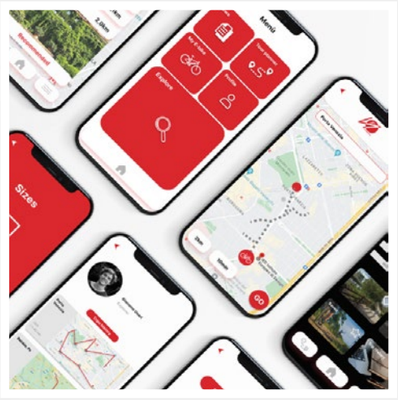
Frame + Geometry

The frame's iconic shape is a **combination between straight tube and step-trhough**. No down tube and split top tube make space for luggage. This means a thicker top tube and head tube. We've designed a bike frame geometry that's **Halfway between Gravel and City Bike with some MTB characteristics** (suspension and low fork trail).
The perfect **"do it all"** bike to go wherever you please.



IEDEX

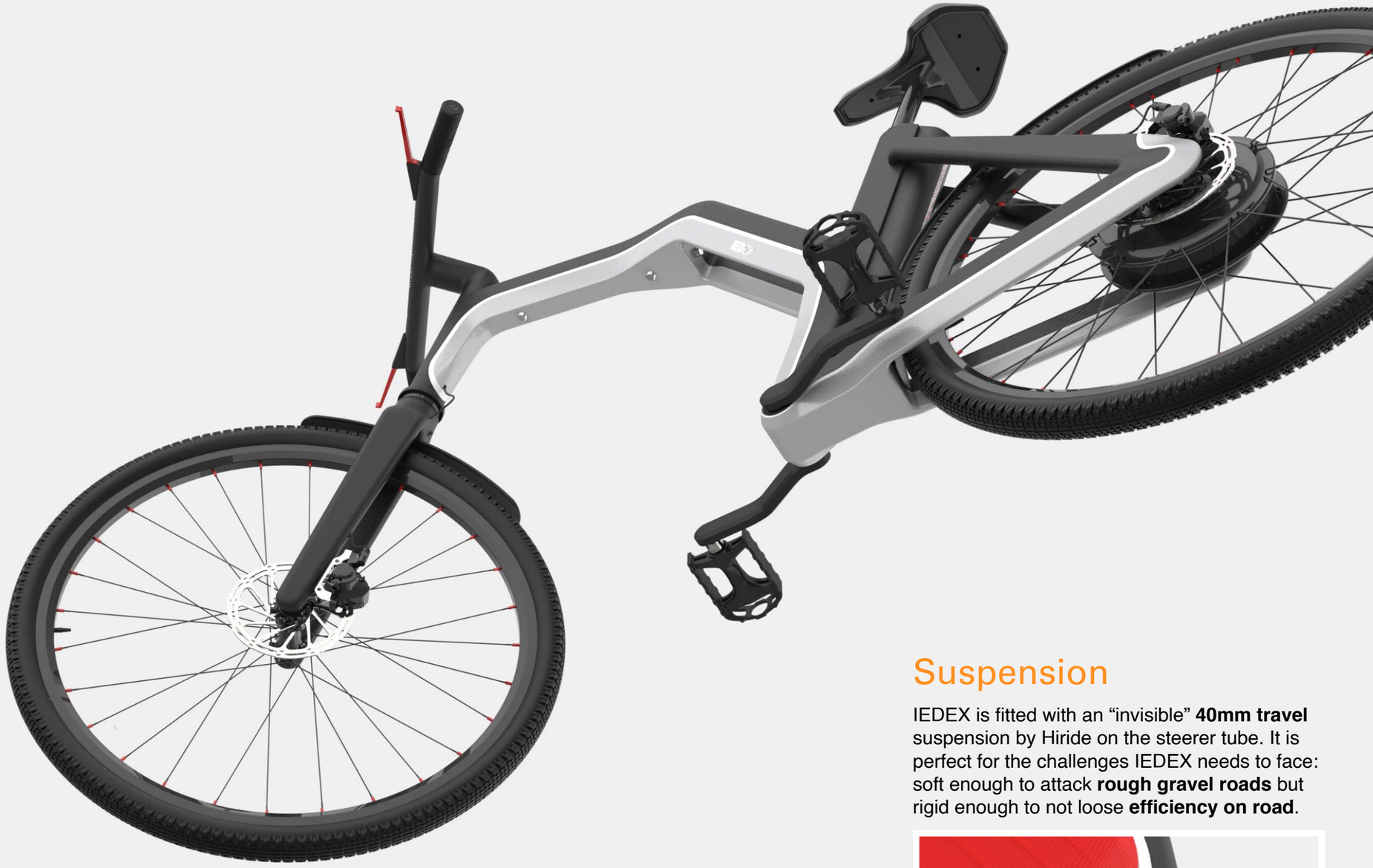
IEDEX is an **e-bike leasing service** that aims to get the user to explore and discover his own city and beyond. The user can **plan his desired route using the IEDEX App** and he will be guided by the integrated navigator during his experience, allowing him to **discover the undiscovered** (and unappreciated) wonders of his surroundings.



MAIN FEATURES

Navigation

IEDEX guides you through your adventures thanks to the **screen on the handlebars**.
It will guide you through your chosen waypoints and destinations but will also propose occasional detours **taking you to the hidden gems** and unknown beautiful places you would't have seen otherwise.



Ride by Wire

We've noticed that novice cyclists have **a lot of trouble with chain maintenance**.
That's why we've decided to lose the chain entirely thanks to Heinzmann's Ride By Wire System. The system works by **transmitting the pedal strokes by wire directly to the motor**, wich moves in correlation to the pedals. The bottom bracket is fitted with a **resistance generator turning your calories into watts**.

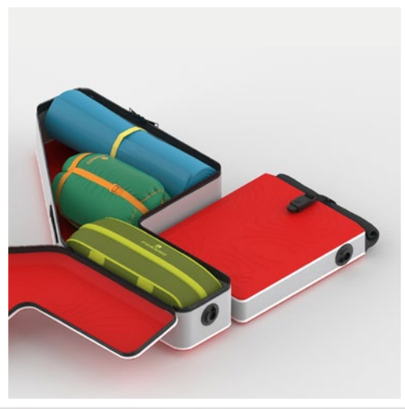
Suspension

IEDEX is fitted with an "invisible" **40mm travel** suspension by Hiride on the steerer tube. It is perfect for the challenges IEDEX needs to face: soft enough to attack **rough gravel roads** but rigid enough to not loose **efficiency on road**.

MAIN FEATURES

Ride by Wire

Heinzmann's Ride By Wire System replaces traditional chains in cycling with a motor and transmission combo, **eliminating chain maintenance**. Pedal strokes are transmitted directly to the motor via wire, while a **resistance generator** in the bottom bracket converts calories into watts, stored in the battery.



Luggage

IEDEX features two custom-designed luggage bags: the **Personal Items Bag** and the **Camping Equipment Bag**. The Personal Items Bag doubles as a **shoulder bag and stores user-owned items**. The Camping Equipment Bag, designed in collaboration with **Ferrino**, securely holds **camping gear like tents, mattresses, and sleeping bags**.

Mounting

After testing and prototyping, we opted for **Fidlock magnetic fasteners** to mount the bags on the bike. These fasteners are both quick and robust, capable of holding up to 15kg each. The Personal Items Bag is secured with two fasteners, **sliding out from the top of the frame**. The Fidlock Snap female points double as attachment points for the shoulder strap, converting the bag into a shoulder bag. The Camping Equipment Bag uses three fasteners and **slides out from the side of the frame** using a handle.

PROTOTYPE

HOW CAN WE IMPROVE THE PERFORMANCE OF GRAVITY SADDLES?

Design a saddle with an innovative grip system utilizing structural printing technology

Nembo

2023
Designed for Prologo

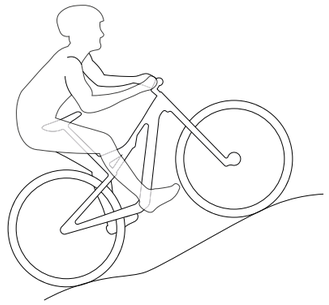
Duration: 8 Months
Role: Research, Developement, Ergonomics, CAD, Prototyping, Production

Employer

prologo

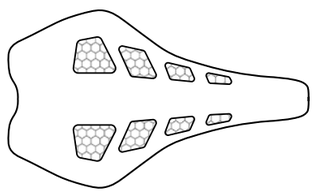
RESEARCH

Pain Points



Cyclist's **slip out from the saddle** when approaching climbs, resulting in less pedaling efficiency.

Cyclist's have **trouble "finding" the saddle** between their legs for control in downhill sections.



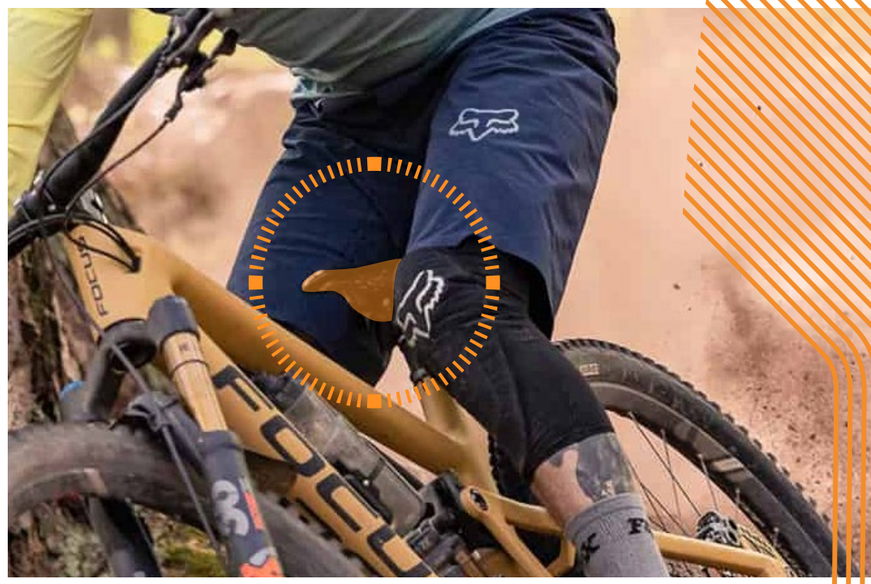
CPC technology is way to grippy and **doesn't allow for smooth transitions** from the saddle.

Incremental Innovation

Incremental innovation is about **steadily improving existing products**, services, or processes over time. It involves making **small, manageable changes** rather than radical overhauls, which reduces risk and allows for continuous improvement. This approach fosters adaptability, responsiveness to customer needs, and **long-term competitiveness**.

Bike Control

Downhill riders **use the saddle between their legs** for control during descents. By gripping the saddle with their legs, riders can **anchor themselves to the bike**, preventing their body from shifting too much or being thrown off balance. This technique allows them to absorb impacts, maneuver the bike more effectively, and maintain control at high speeds. Essentially, using the saddle as a point of contact **enhances the rider's connection to the bike**, improving overall handling and confidence during downhill descents.

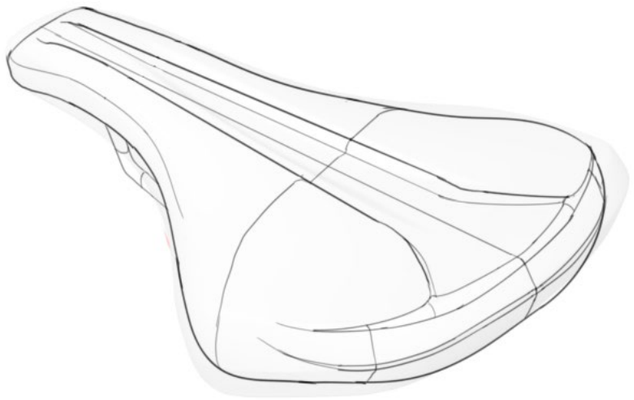


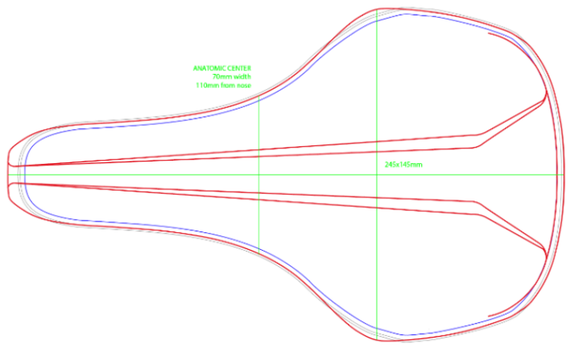
GRDXKN®

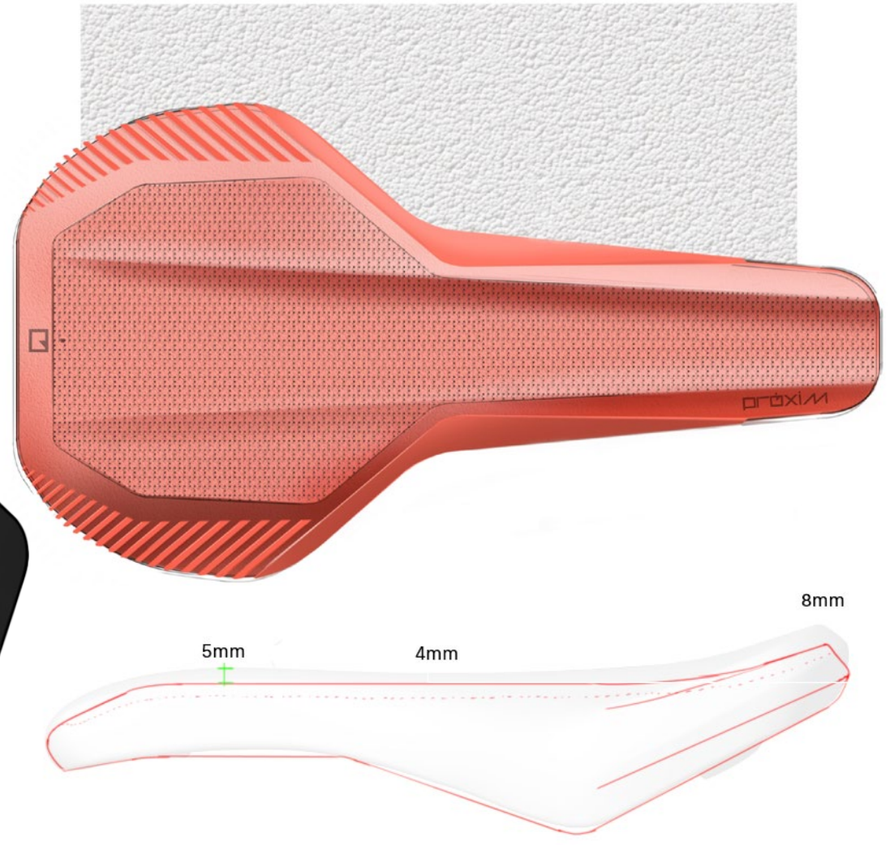
GRDXKN is a polyurethane printing technique that adds **3D texture to textiles**, enhancing grip and structural stability. By depositing polyurethane in precise patterns, it i**mproves traction, durability, and overall performance across various applications**, from sportswear to upholstery.

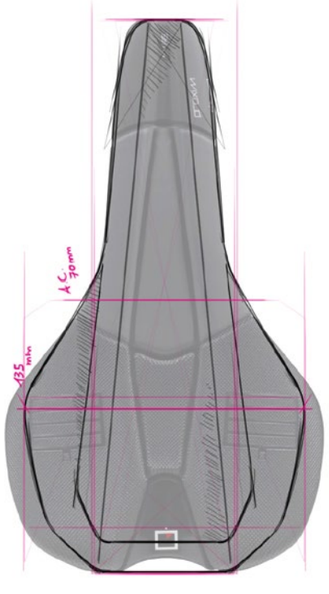
IDEATION

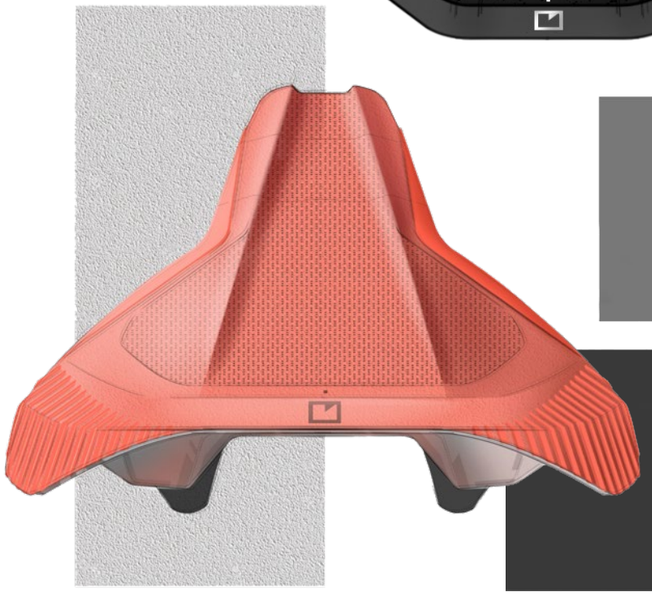
Sketching

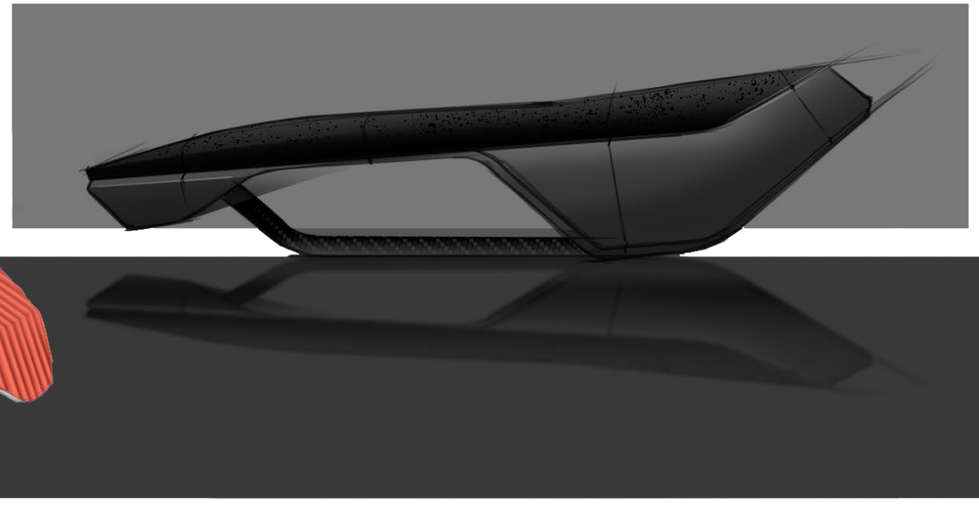




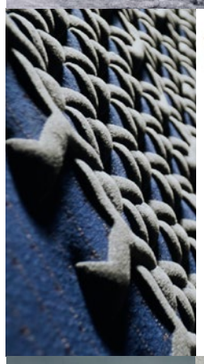


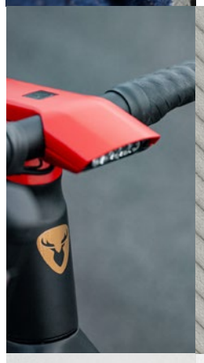


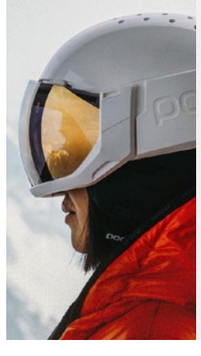




Inspiration



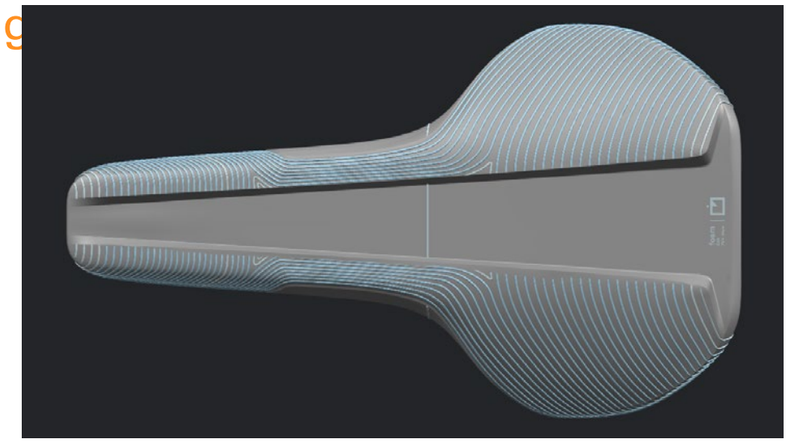


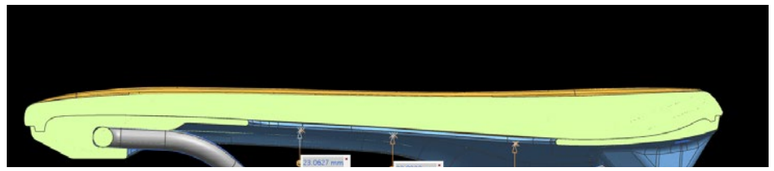


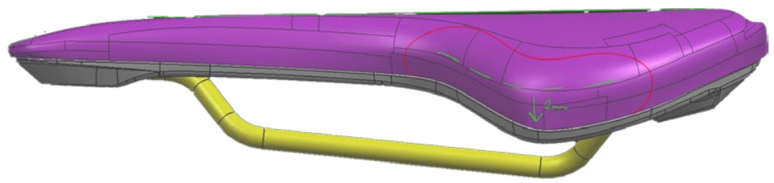
DEVELOPEMENT

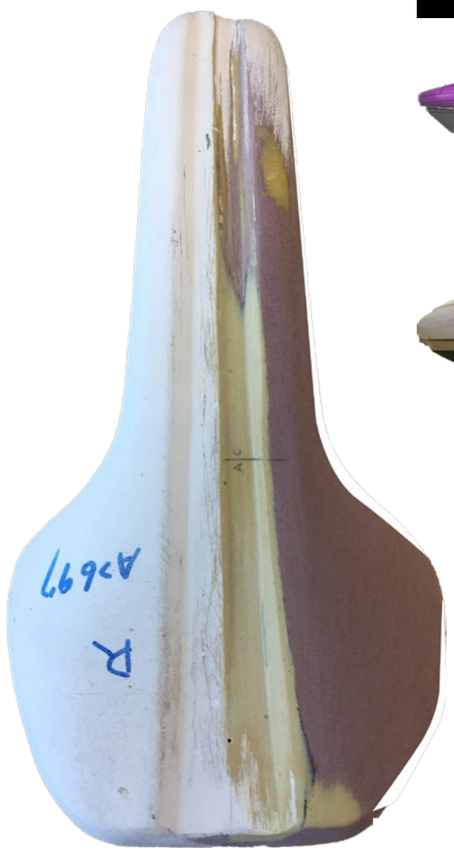
CAD + Prototyping

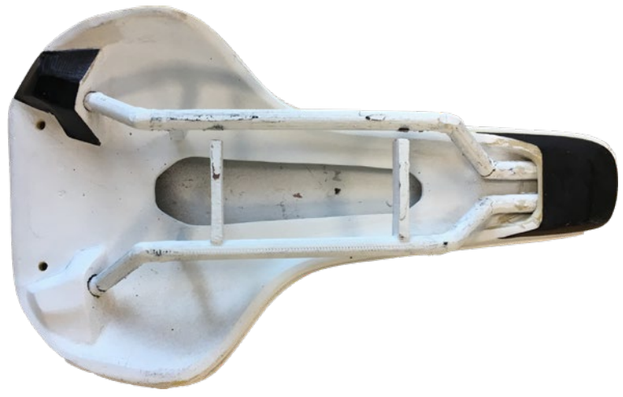
Nembo's CAD was **developed iteratively between the Taiwan and Busnago** offices. Engineers refined the design based on feedback, leading to the creation of a **first prototype CNC'ed for testing**. After refining the prototype based on test results, it was scanned and then **converted into a final CAD model for molding**.





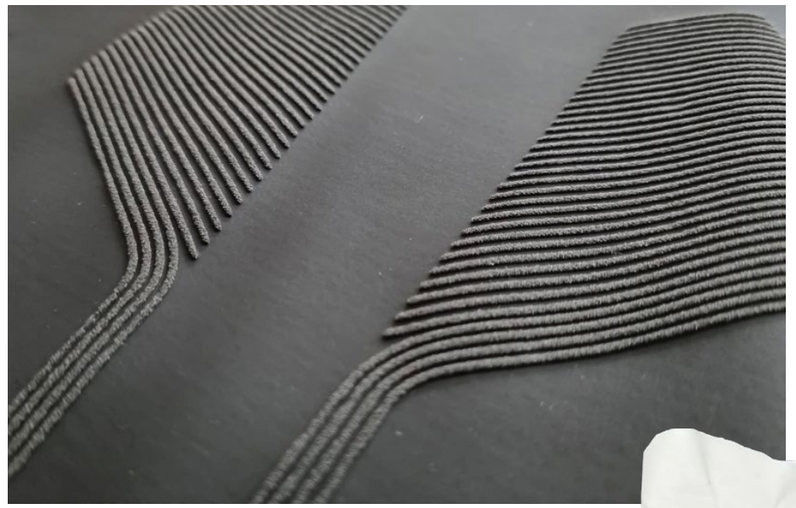


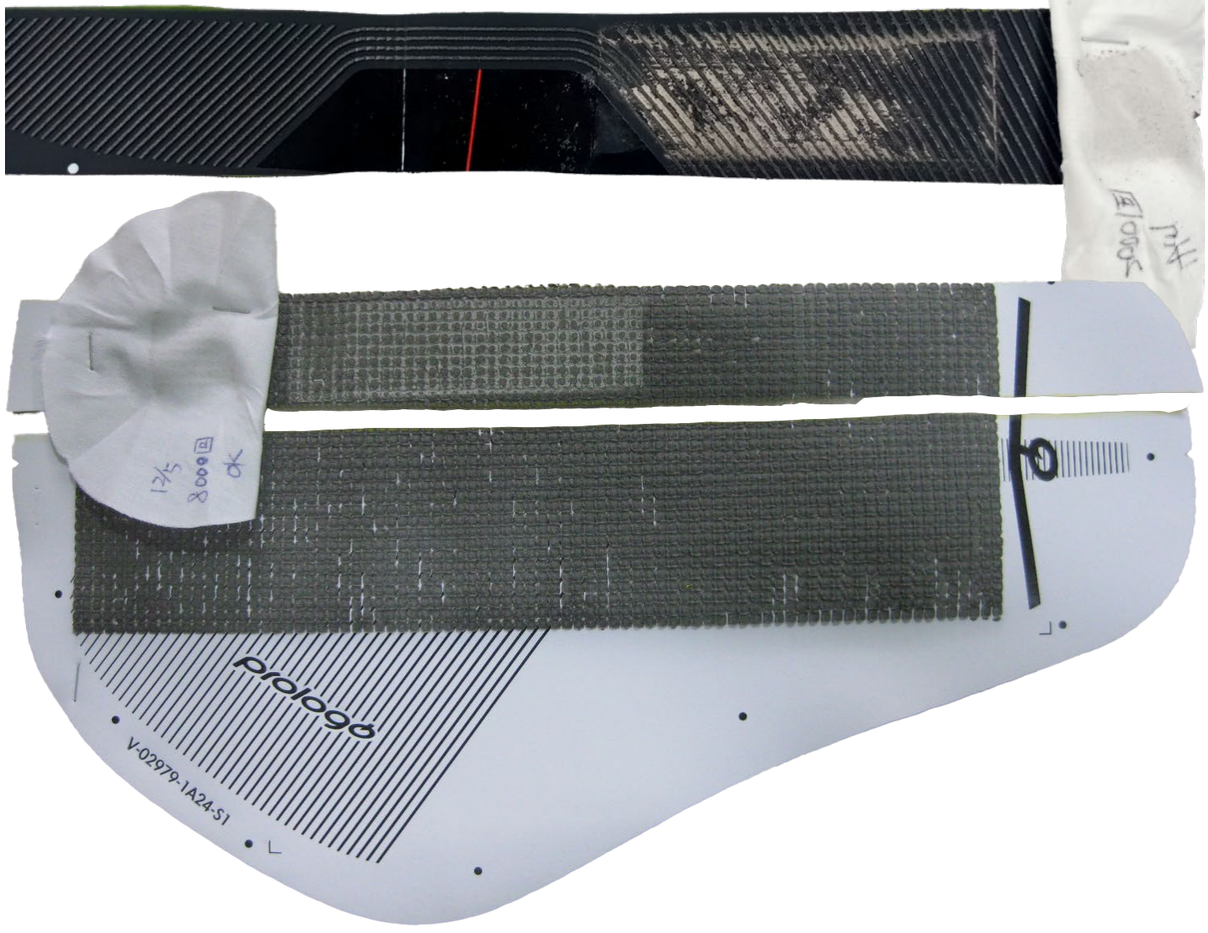




GRDXKN® Testing

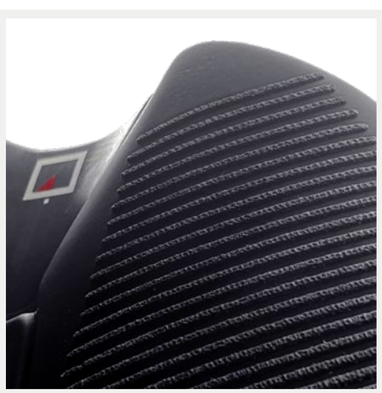
The GRDXKN printing technique was applied to saddle covers through **iterative development, printing tests, and durability assessments**. Once optimized, it was seamlessly **integrated into Prologo's production chain** with collaboration between teams and GRDXKN experts.





NEMBO

Stability, control, resistance, and comfort are the sought-after features in a high-performance saddle for extreme off-road disciplines like All-mountain, Enduro, and Downhill. **Proxim Nembo represents the latest evolution in gravity saddles**, designed in collaboration with Prologo-supported World Cup Enduro and DH teams.



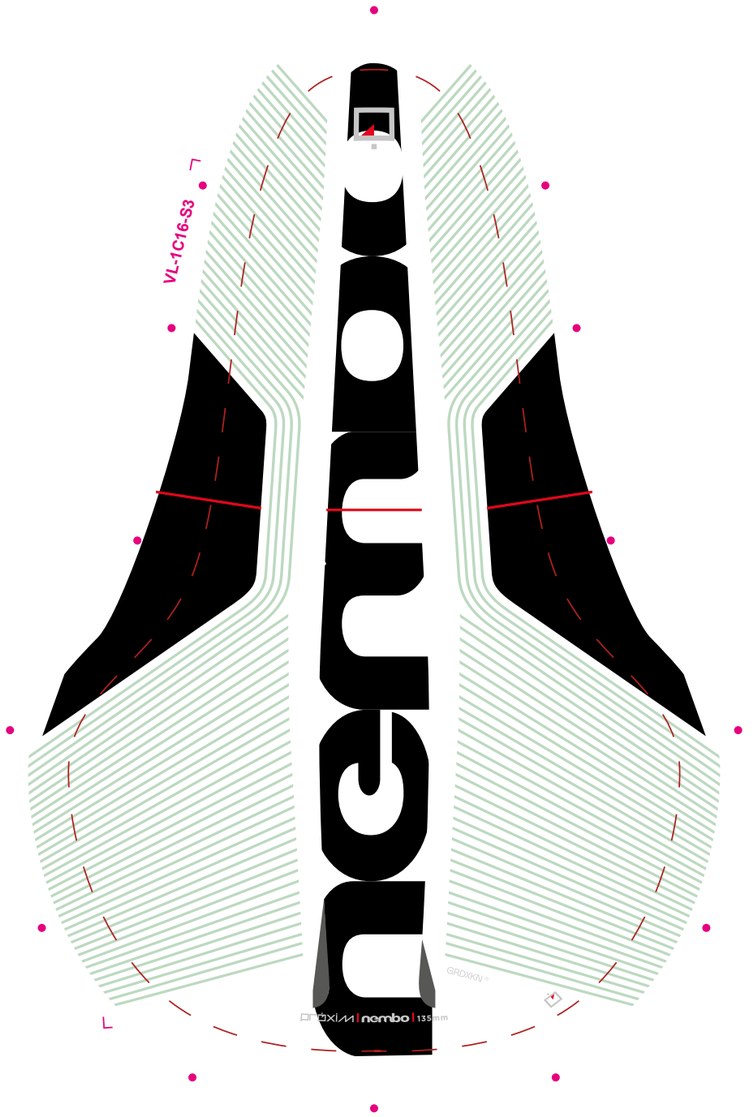
NEMBO

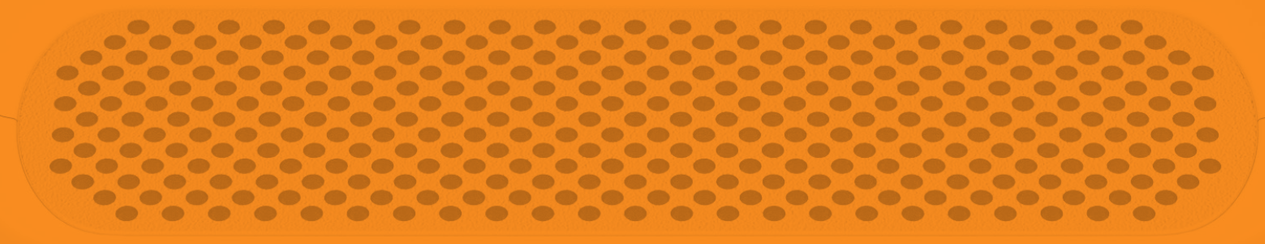
Ergonomics

The Proxim Nembo features padding made of **variable-density foams** to provide maximum support where the ischial bones rest and increase comfort in other areas where soft tissues make contact. Its **flat ergonomic shape** offers a good support surface, ensuring maximum support and excellent stability during rides. The **wider nose enhances bike control** in all phases of riding, even during out-of-saddle descents, while the **rounded rear facilitates movements** when getting on and off the saddle. Additionally, to minimize pressure points, the saddle has a wide central channel.

Grip

For riders seeking ultimate bike control in both pedaling and out-of-saddle descents, an advanced version of the Proxim Nembo is available with the proprietary “GRDXKN” technology. This model boasts a **unique 3D polyurethane print** on the cover, enhancing grip to **help riders maintain stability in the saddle throughout all riding phases**, even in the harshest wet and muddy conditions.





HOW CAN HYBRID TEAMS COLLABORATE MORE EFFECTIVELY?

Design a audio device for spontaneous hybrid meetings in noisy environments

Nembo

2024
Academic Project

Duration: 2 Months
Role: Research, Sketching, Developement, CAD, Rendering

Partner

btsdi

RESEARCH

Pain Points

Everyone has joined the meeting on their personal devices, so there is **less engagement in-person**.

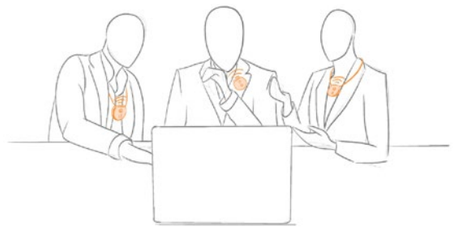
The device is set up so everyone is visible, **not everyone can hear well**.

Online team members are disconnected from the natural in-person conversation.

Technological Innovation

Technological innovation encompasses utilizing new materials, employing digital design tools for rapid prototyping and simulation, integrating smart features like sensors and connectivity, adopting advanced manufacturing, incorporating sustainable solutions, and enhancing user experience through intuitive interfaces and customization options. **These innovations drive progress and competitiveness by meeting consumer needs** and addressing challenges in various industries.

Objectives



Eliminates the need for multiple personal devices (phones, pc's) for those in-person to participate.

Establishes **consistent audio clarity** for those online, no matter the in-person user's position in the room.

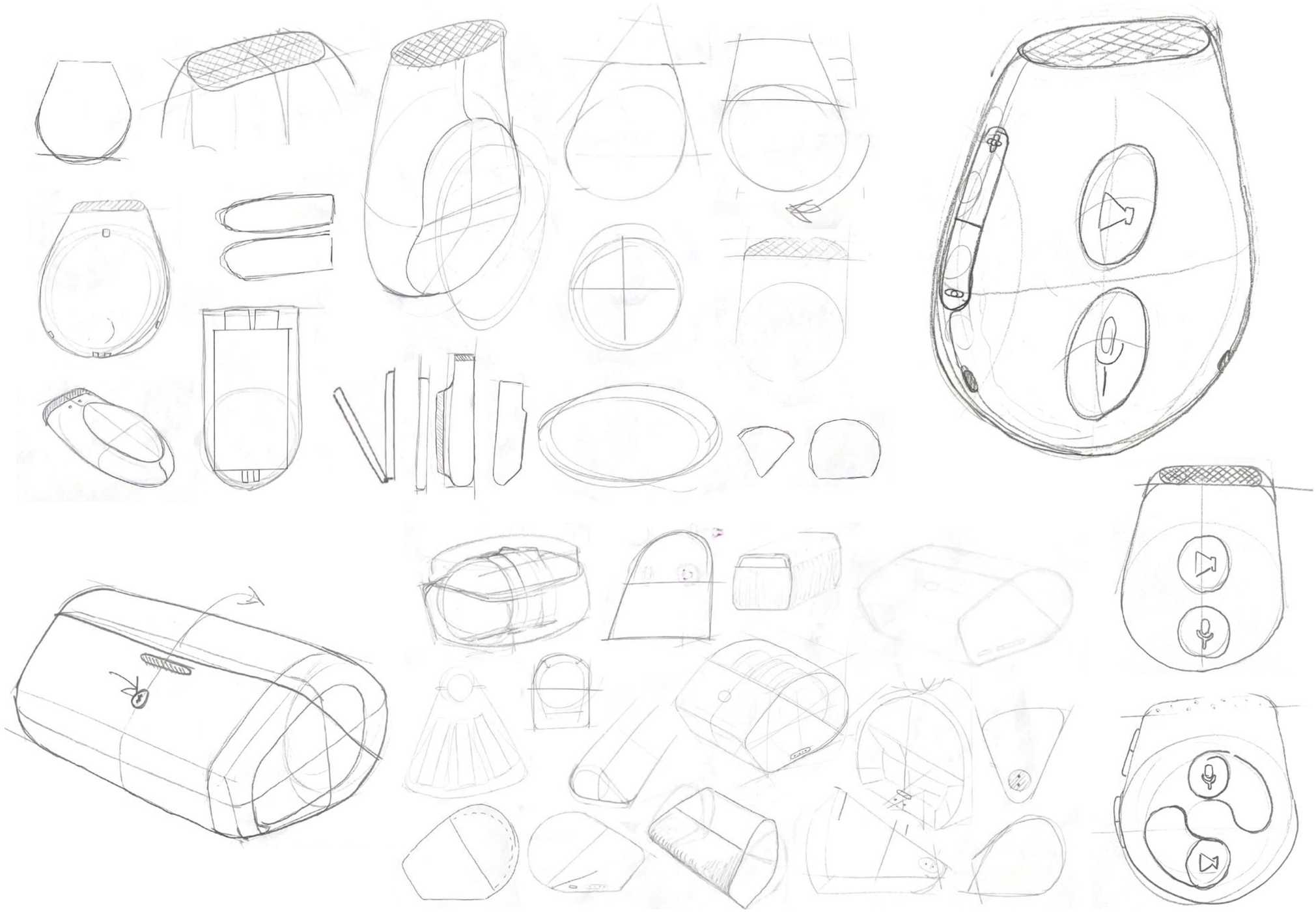
Facilitates **more natural collaboration between in-person and online** members.

Drivers

- **Output Audio Clarity**
- **Input Audio Clarity**
- **Freedom of Mobility**
- **Multiple Users Modularity**
- **Shareability and Hygiene**
- **Portability**
- **Power and Charge**

IDEATION

Sketching

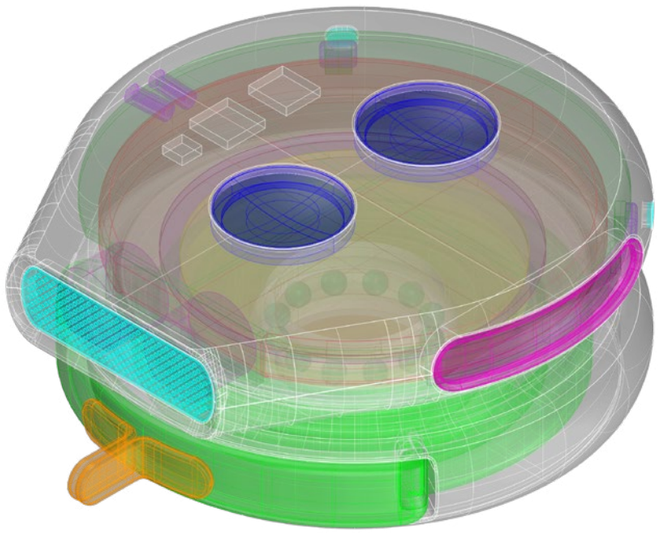


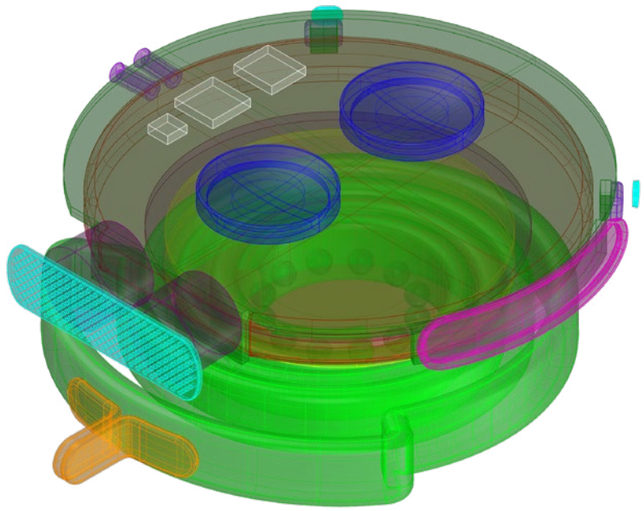
Inspiration

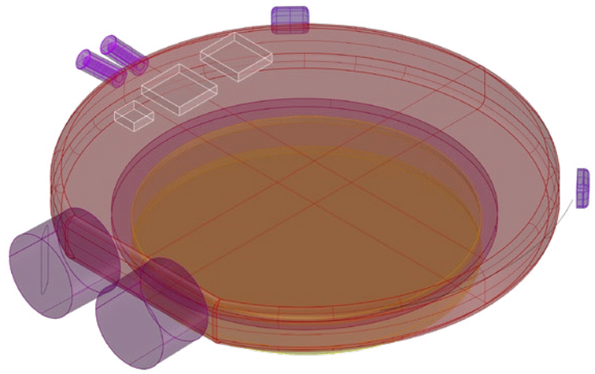
DEVELOPEMENT

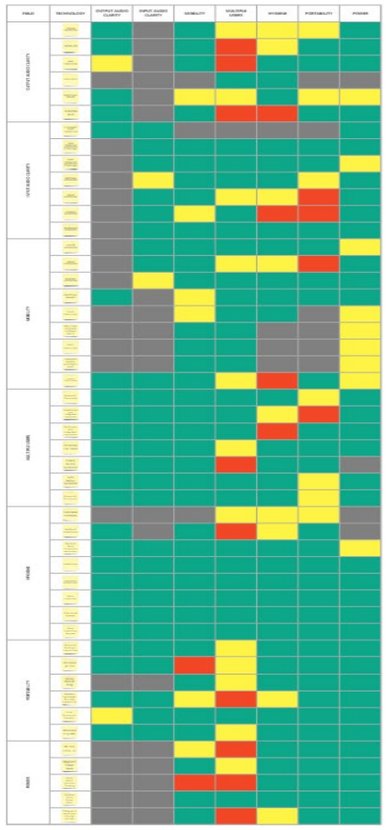
Internal Components + CAD

In developing Hibird, we **chose components based on thorough research**, considering factors like performance, durability, and audio quality, shareability, hygiene and quality. We then **developed the CAD by fitting these components together**, ensuring optimal functionality, ergonomics, and user experience.









Technological Affinities

The initial step involved researching various applied technologies, followed by a **comparative analysis with alternative options to identify compatibilities and potential limitations**. These findings were then synthesized into multiple concepts, which underwent further comparison to select the **most viable final concept**.

Chosen Components

The primary technologies and components include Directional Microphones, adept at **filtering out background noises**, and Directional Speakers, which **confine sound primarily to the user**. Moreover, these elements facilitate **hygienic usage** and storage. Additionally, Pogo Pins charging renders the device **modular and effortless** to use and store.

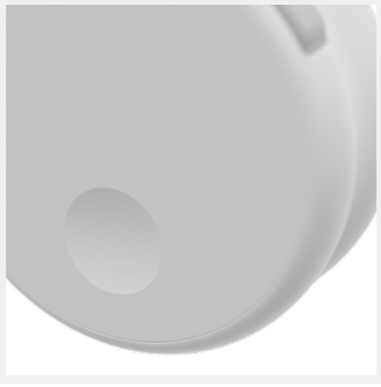
Directional MEMS Microphone

Ultrasonic Directional Speaker

Pogo Pins Charging

HIBIRD

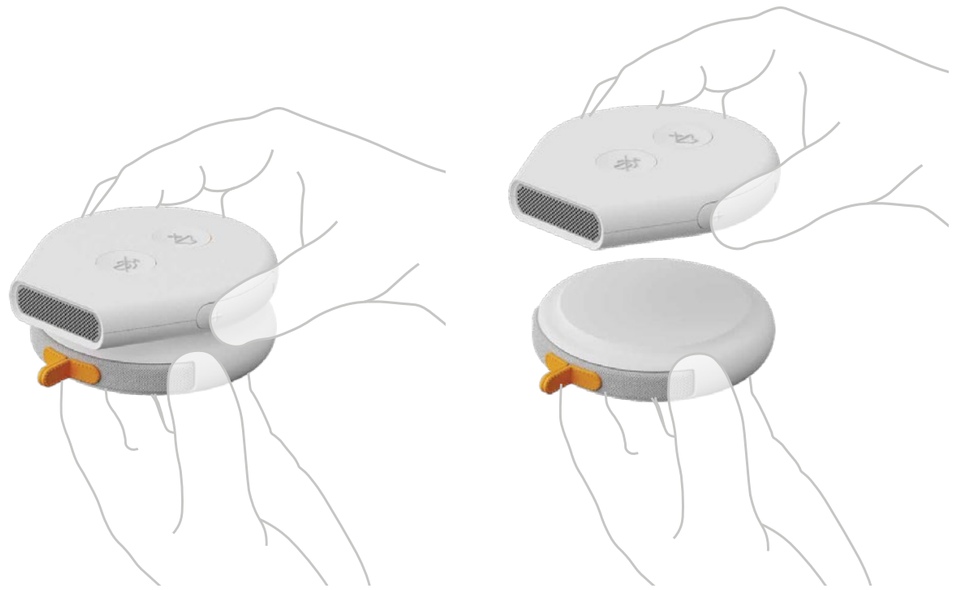
HiBird is a portable device designed for teams without borders. Our design purpose is to make it possible to have **natural and uninterrupted dialogue for hybrid team meetings** while keeping in mind that team work can be done in noisy environments. HiBird is a **modular and shareable** device, so it is designed with hygienic features and technologies.



MAIN FEATURES

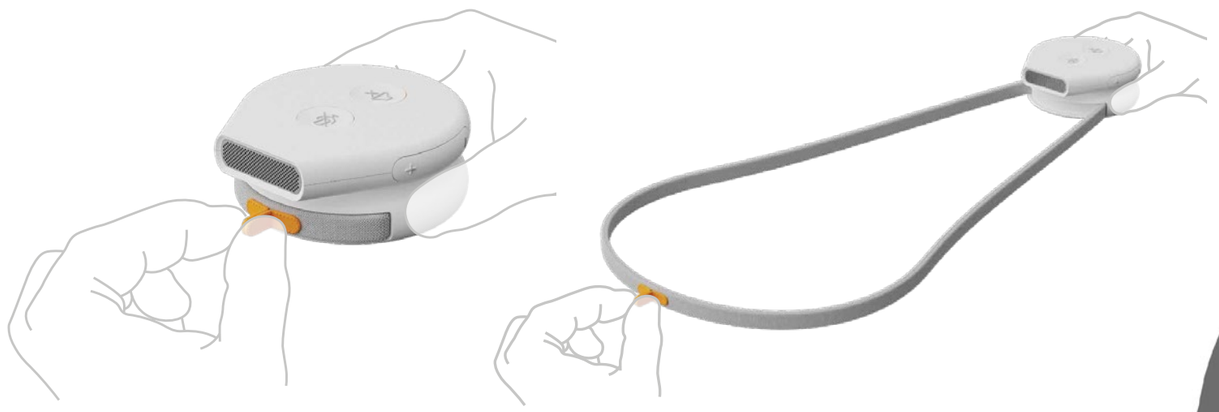
Pin

Hibird can be **worn as a clothing pin**, with a detachable back that allows for easy clipping onto garments.

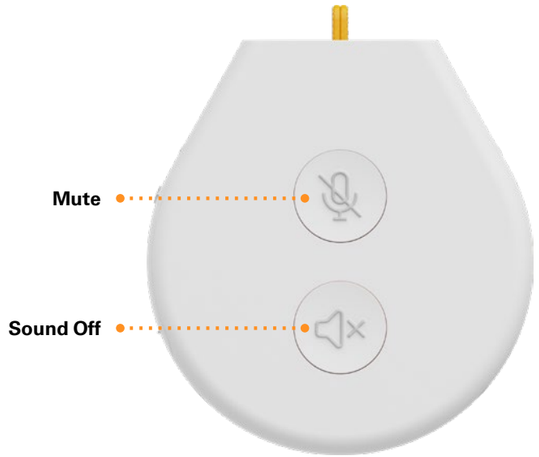


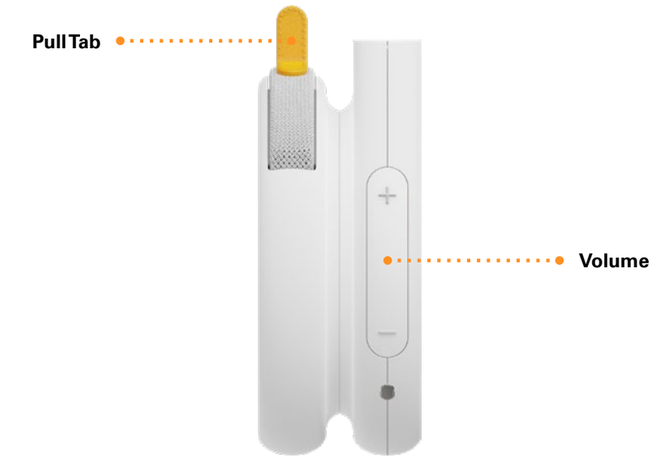
Lanyard

Hibird can be **worn as a lanyard** for garments unsuitable for pin attachment. Its rear magnet houses a retractable lanyard, which can be easily extended and rolled back inside when not in use.



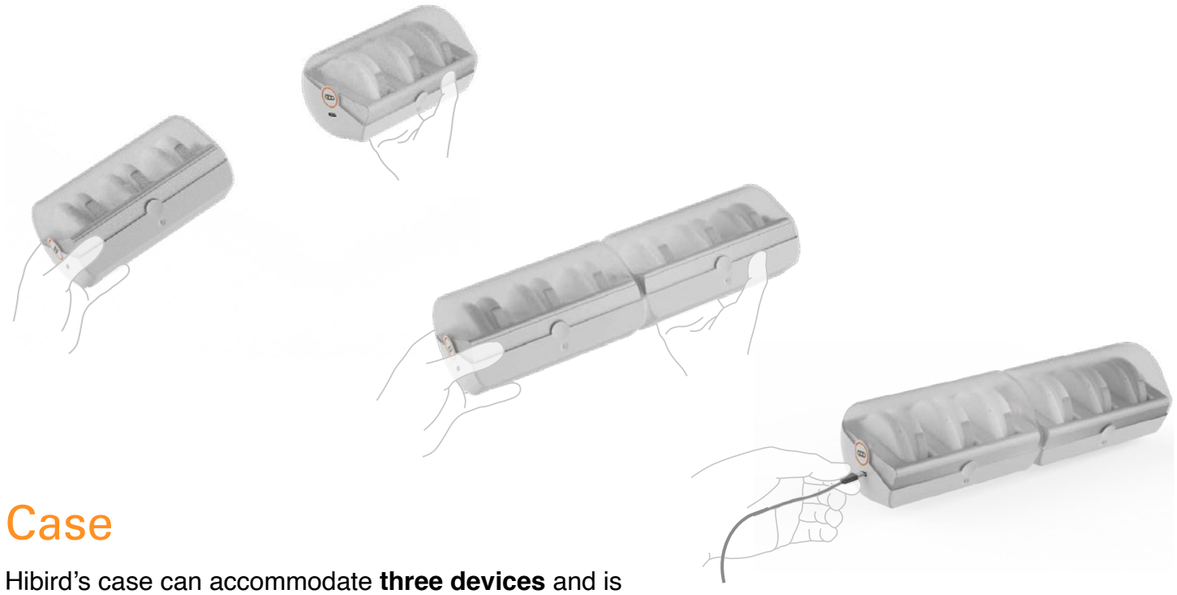
MAIN FEATURES





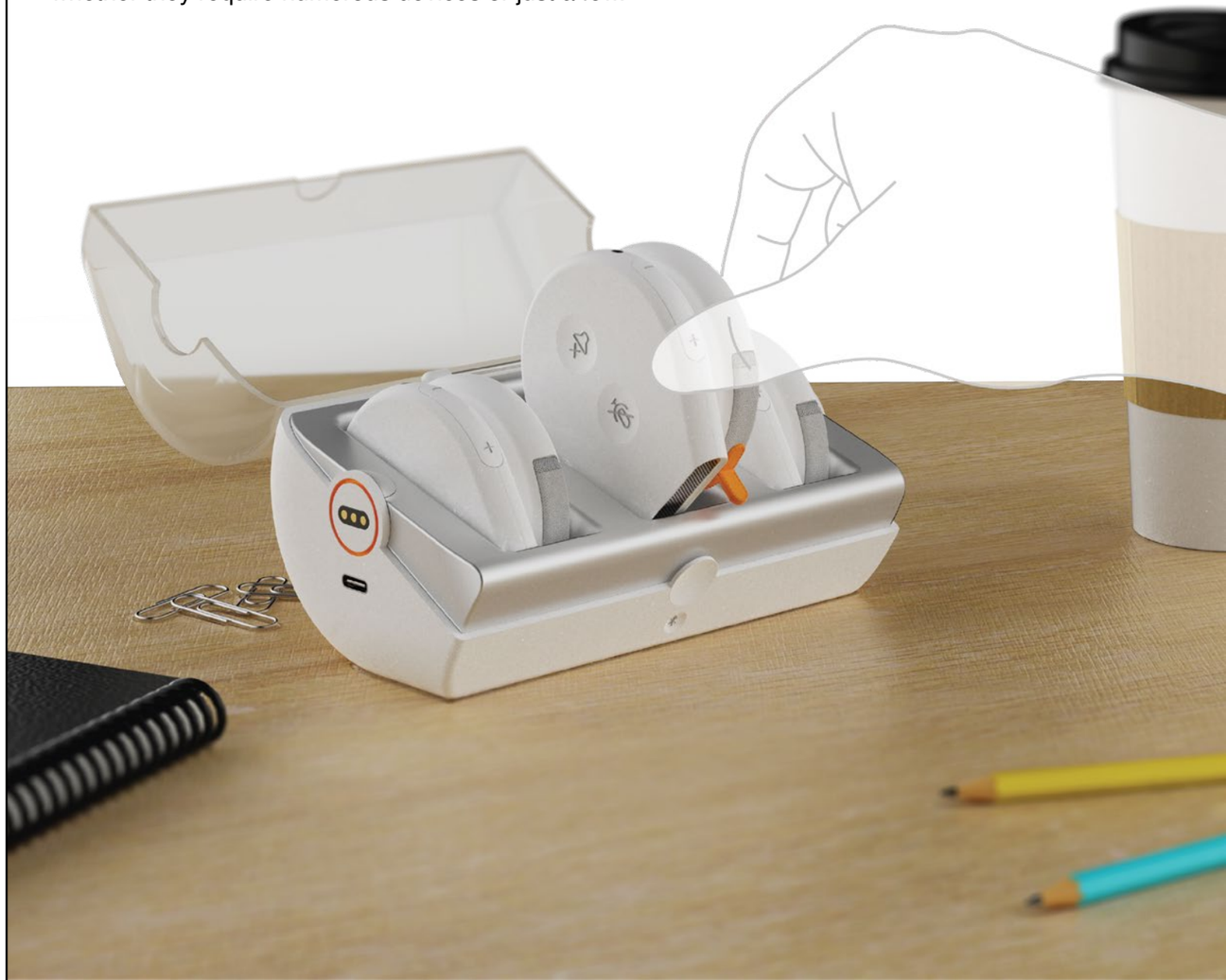
Interface

Hibird's interface is designed for **usability even without direct visual contact** with the device. The volume buttons are conveniently positioned for easy access, while the front buttons provide both **visual and haptic feedback** when engaged.



Case

Hibird's case can accommodate **three devices** and is **expandable infinitely by connecting multiple cases together**, all of which can charge with a single cable. This versatility allows teams of any size to adjust easily, whether they require numerous devices or just a few.



HOW CAN WE IMPROVE THE PROCESS OF VACUUM SEALING?

Design a vauum drawer implementing sealing and humidity control in one package inside the fridge

Freshzone

2024
Academic Project

Duration: 4 Months
Role: Research, Sketching, Developement, CAD, Rendering

Partner

Electrolux

RESEARCH

Opportunity

What if we **combined** the regular process of storing food in the fridge with vacuum sealing technology?

Shopping

Unpacking

Vacuum Sealing

Pros:
Food lasts longer under vacuum
Food types are separated

Cons:
Time consuming
Plastic waste
Organization of bags in fridge

Fridge Storing

Pros:
Quick and efficient
Less plastic waste

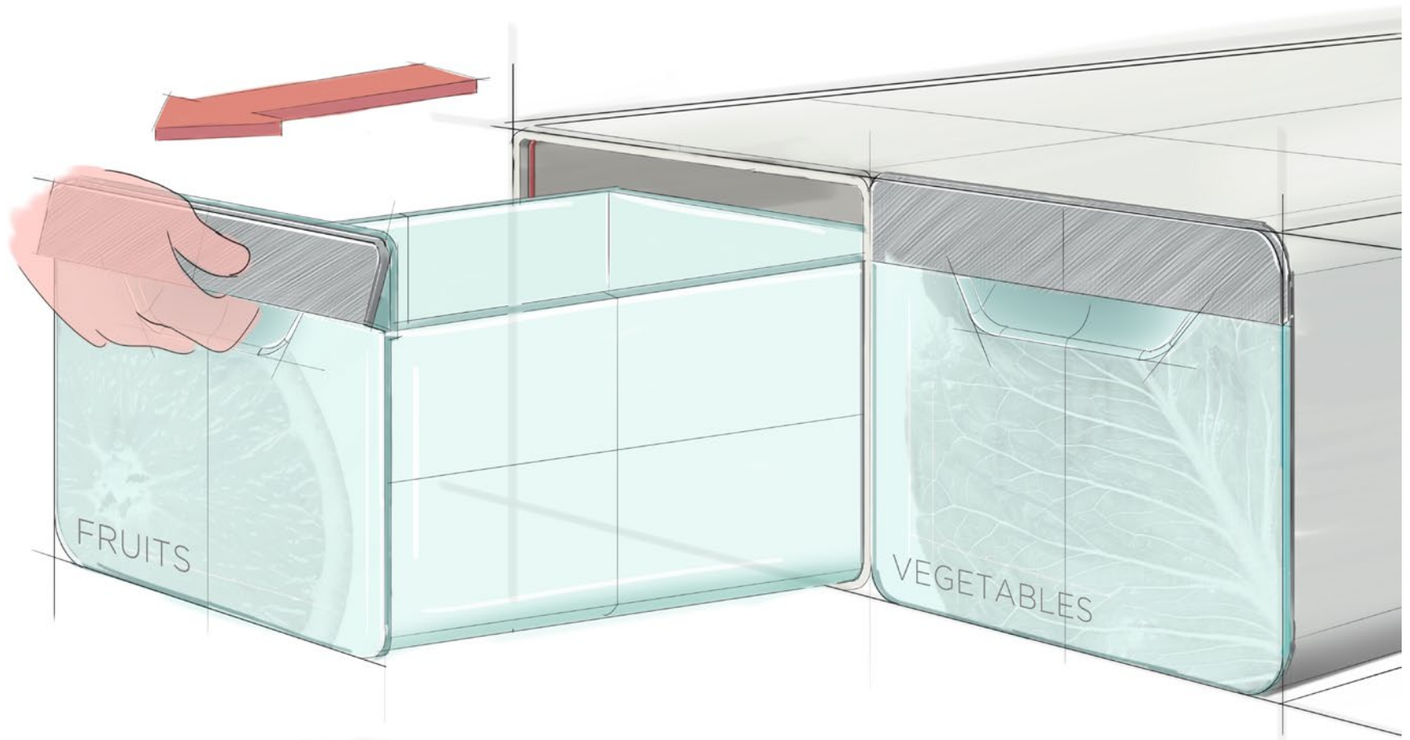
Cons:
Exposure to air
Foods aren't separated
Organization is time consuming

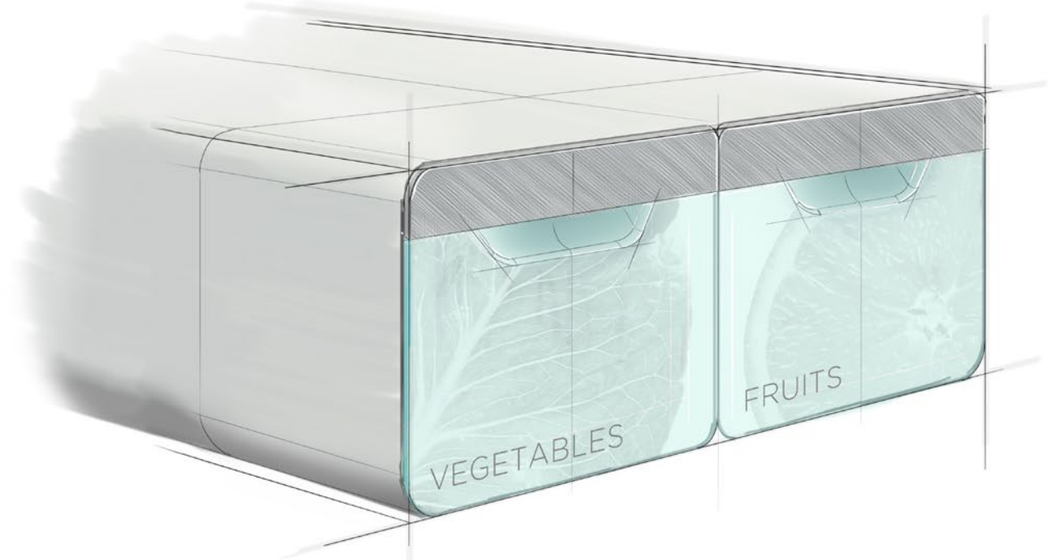
Case Study

Hitachi has developed a Vacuum Drawer for their fridges, it uses 0.8 atm vacuum in their fridges, but research shows this **doesn't significantly reduce spoilage**. Also **humidity in airtight enviroments tends to increase**, leading to non-effective storage.

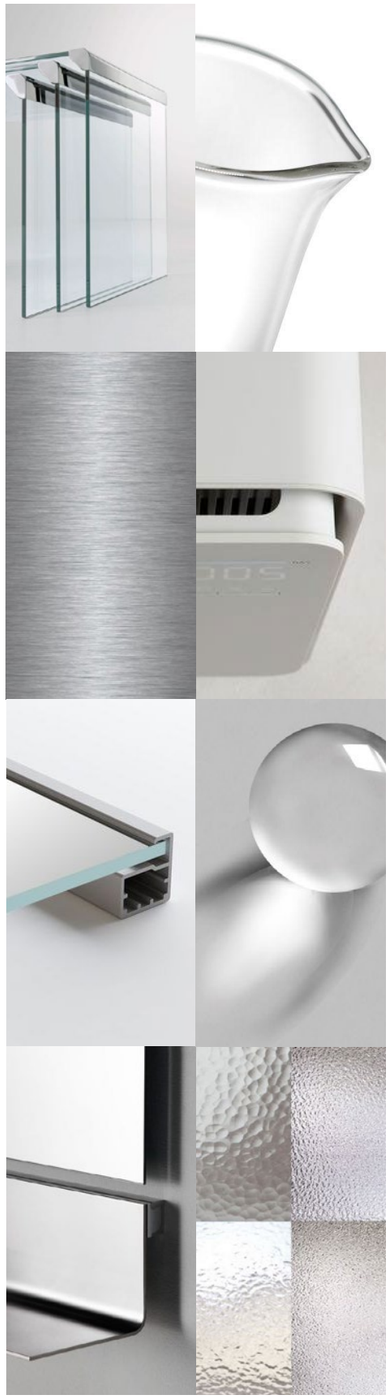
IDEATION

Sketching

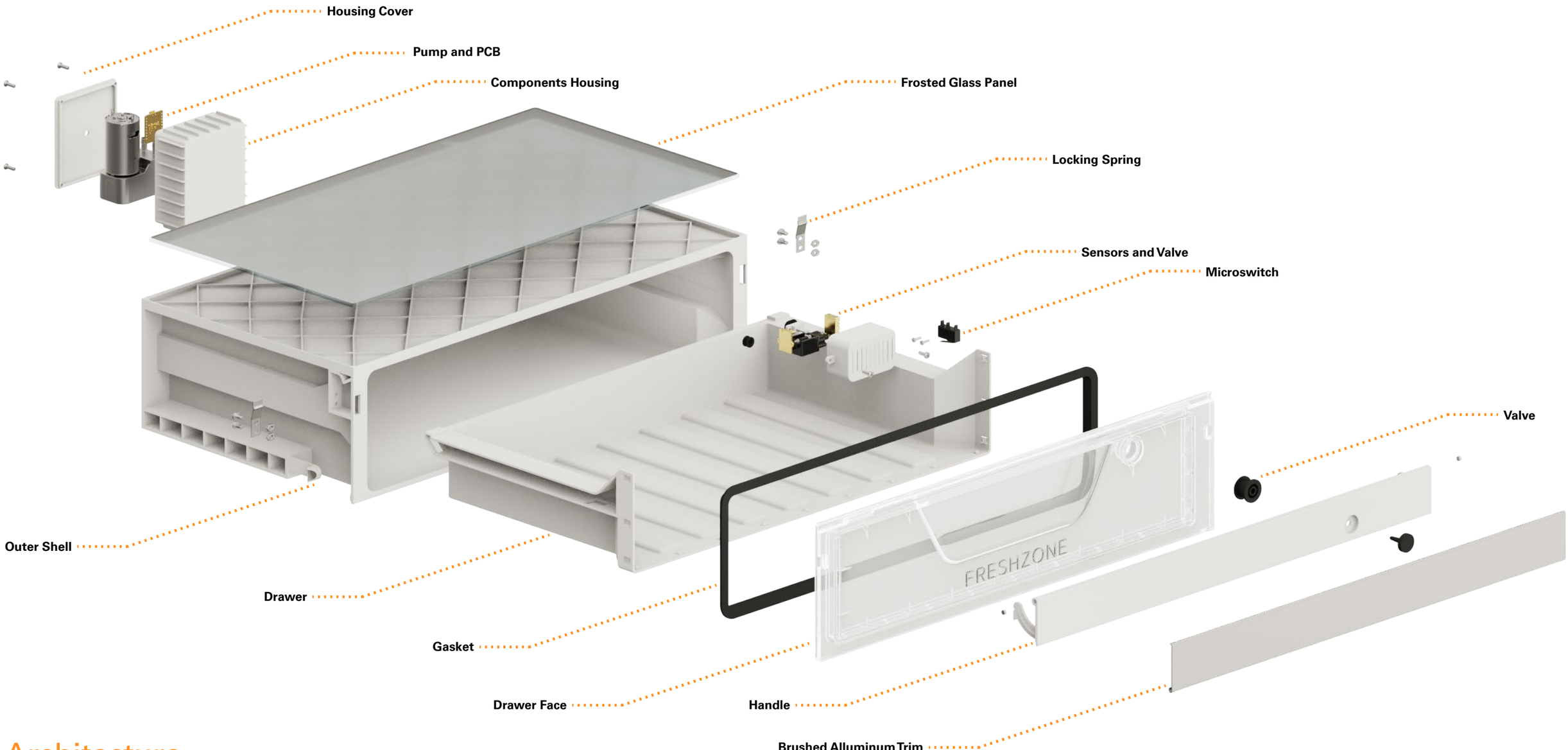




Inspiration



DEVELOPEMENT



Architecture

Freshzone is connected to the fridge's structure with reversible snapfits.

The **wiring and the pump's hose** is run through the back of the fridge and **into the foam where the pump is located**.

The components plug in the power supply of the fridge **without disturbing the existing architecture**.

Luca Matturro

FRESHZONE

Freshzone is a **vacuum drawer that integrates into the fridge**, prolonging freshness of the food, and creates a **seamless experience** by eliminating the transition between vacuum and fridge.
The drawer that keeps your food fresher, healthier and tastier with the **power of air**!

MAIN FEATURES

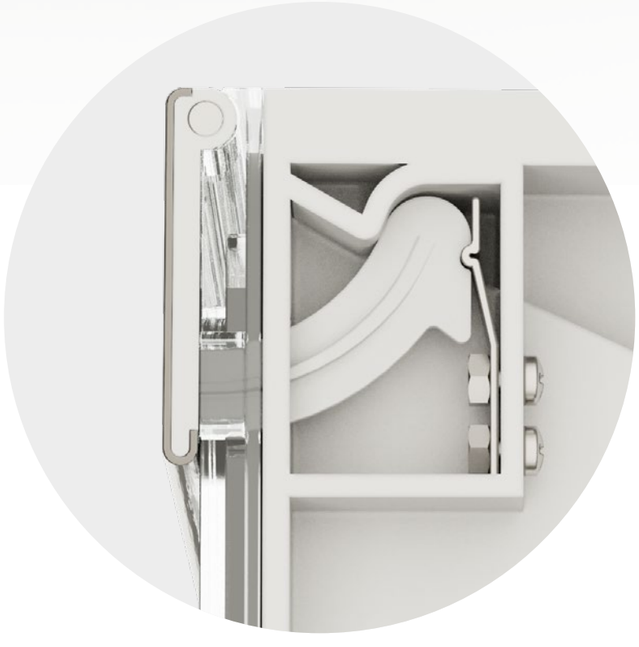
Airtight

An airtight environment is achieved through a sturdy shell and front face that **interface through a perimetral gasket**.

The user can access the drawer by using the handle, **breaking the seal** through a specialized valve.

The locking is achieved through the **purpose made mechanism**.

Open

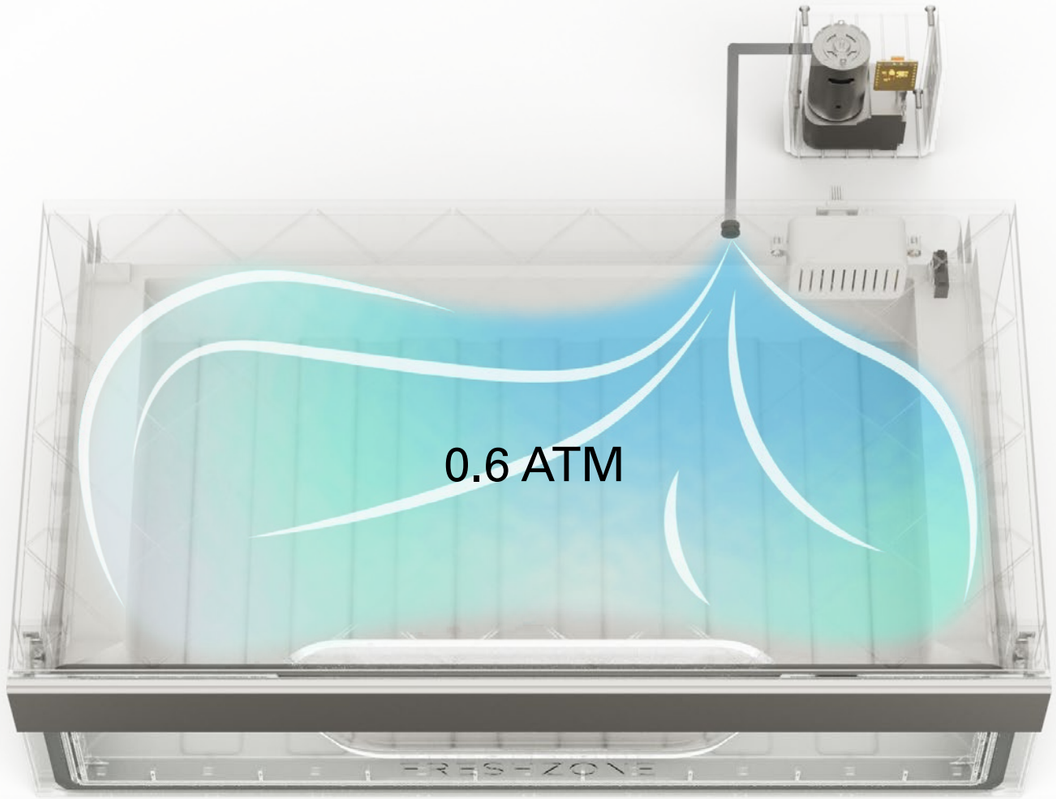


Locked and Sealed

MAIN FEATURES

Controlling Air

Freshzone is powered by a **Main Pump** that utilizes a set of Valves and Sensors to control an airtight environment of **0.6 ATM of pressure**.

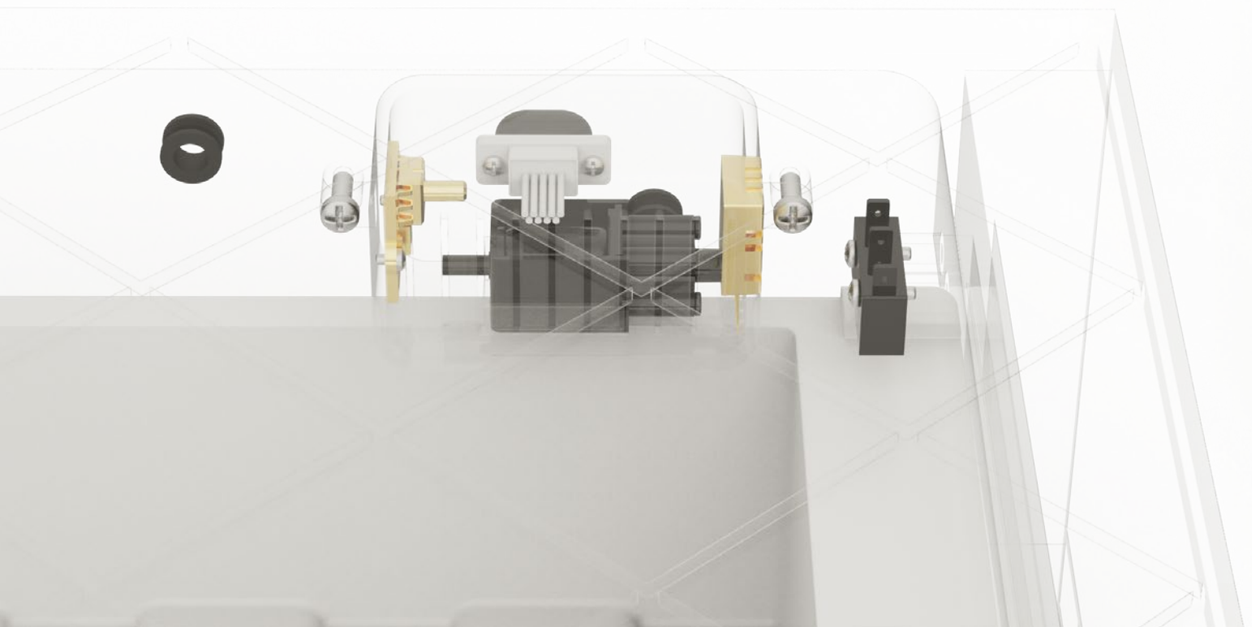


Ideal Humidity

Food kept in a sealed environment **builds up humidity**.

Freshzone regulates the environment by sensing when the air is becoming too moist. It opens the internal valve and runs the pump.

Letting dry air from the fridge flow through the system keeping an humidity level of 80%.



THANKS!

@ luca.matturro@gmail.com in linkedin.com/in/luca-matturro Bē behance.net/lucamatturro_design Monza, Lombardia, IT (+39) 327 747 4698